

ARS □ CSREES □ ERS □ NASS

Policies and Procedures

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This P&P establishes a new ARS policy for the development within 3 years of an Agency wide facility Operations and Maintenance Plan.
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1. Purpose

This Policy and Procedure (P&P) establishes a new Agricultural Research Service (ARS) requirement for the development of an Agency wide facility Operations and Maintenance (O&M) Plan within 3 years from the date of issuance of this P&P.

2. Background

ARS has over 3,200 buildings at 108 locations. They include laboratories, offices, greenhouses, agricultural buildings, and bio-containment facilities. Laboratories and greenhouses are very energy intensive. About 85 percent of the total cost of ownership of a facility is related to O&M, and about 40 percent of that is utilities.

A facility O&M plan is one of the most cost-effective methods for ensuring reliability, safety, and energy efficiency. Inadequate maintenance of energy-using systems is a major cause of system deterioration and energy waste in both the Federal Government and the private sector. Energy losses from steam, water and air leaks, un-insulated lines, maladjusted or inoperable controls, and other losses from poor maintenance are often considerable. Good maintenance practices will prevent premature equipment failure and will result in a decline of service calls. It can generate substantial energy savings and should be considered a resource. Moreover, improvements to facility maintenance programs can often be accomplished immediately and at a relatively low economical cost.

It is estimated that O&M programs targeting energy efficiency can save 5 percent to 20 percent on energy bills without a significant capital investment. From small to large sites, these savings can represent thousands to hundreds-of-thousands of dollars each year and many can be achieved with minimal cash outlays.

Beyond the potential for significant cost and energy/resource savings, a well functioning O&M program operating at its peak *operational efficiency* has other important benefits.

- A well-functioning O&M program is a safe O&M program. Equipment is maintained properly mitigating any potential hazard arising from deferred maintenance.
- In most Federal buildings, the O&M staffs are responsible for not only the comfort, but also the health and safety of the occupants and Indoor Air Quality (IAQ) issues. Proper O&M reduces the risks associated with the development of dangerous and costly IAQ situations.
- Properly performed O&M ensures that the design life expectancy (life-cycle) of equipment will be achieved, and in some cases exceeded. Conversely, the costs associated with early equipment failure are usually not budgeted for and often come at the expense of other planned O&M activities.
- An effective O&M program promotes compliance with Federal legislation such as the *Clean Air Act* and the *Clean Water Act*.

- Good business practice consists of a well functioning O&M program that is proactive in its response and corrects situations before they become problems. This model minimizes callbacks and keeps occupants satisfied while allowing more time for scheduled maintenance.

3. Policy

It is the goal of ARS to develop a robust O&M program to address the many challenges of cost control, energy usage, and efficient management of facilities. This Policy implements a 3 year phased (see “Procedures,” paragraph 7B) facility survey and data collection planning process, a component of the O&M program, for all ARS facility assets consistent with the following guidance:

- The Energy Independence and Security Act of 2007
- Executive Order (EO) 13327, Federal Real Property Asset Management
- The Energy Policy Act of 2005 (EPACT)
- Available Agency resources, current funding programs/limitations, and location resources/maintenance staff.

The end product for every ARS facility asset will be an O&M plan, consistent with guidance posted on SharePoint (see “Procedures,” paragraph 7A), complete with maintenance schedule checklists for all major equipment and components.

4. Authorities

- The Energy Independence and Security Act of 2007
- The Energy Policy Act of 2005 (EPACT 2005)
- Executive Order 13327, Federal Real Property Asset Management
- Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management
- USDA Facilities Operation, Repair, and Maintenance Plan (currently in draft)
- ARS Building Authorities
- ARS Policies and Procedures (P & P), Manuals, and Bulletins (latest edition):
 1. P & P 134.2, Energy, Water and Sustainability Policy (currently in draft)
 2. Automated Annual Resource Management Plan System User Manual, January 2006
 3. Bulletin 06-303, Capturing Operations and Maintenance Costs

5. Responsibilities

- The Facilities Division will provide overall project management, O&M policy guidance, and review of Area plans.

- Deputy Area Directors will implement through the use of Area/contract resources, the development of Area O&M plans in accordance with the implementation schedule and Area resources.
- Center/Location Directors will ensure O&M plans are developed in accordance with Area priorities and the implementation schedule.

6. Definitions

Operations and Maintenance is the decision and action regarding the control and upkeep of property and equipment. These include, but are not limited to the following:

- actions focused on scheduling, procedures, and work/systems control and optimization;
- performance of routine, preventive, predictive, scheduled, and unscheduled actions aimed at preventing equipment failure or decline, with the goal of increasing efficiency, reliability, and safety.

Annual Operating Costs are defined by the Federal Real Property Council (FRPC) to consist of the following:

- Recurring maintenance and repair costs.
- Utilities (includes plant operation and purchase of energy).
- Cleaning and/or janitorial costs (includes pest control, refuse collection, and disposal to include recycling operations).
- Roads/grounds expenses (includes grounds maintenance, landscaping, and snow and ice removal from roads).

Preventive Maintenance are actions performed on a time or machine-run based schedule that detect, preclude or mitigate degradation of a component or system with the aim of sustaining or extending its useful life through controlling degradation to an acceptable level.

Predictive Maintenance are measurements that detect the onset of a degradation to a building system, thereby allowing the cause to be eliminated or controlled prior to any significant deterioration in the component's physical state. Results indicate current and future functional capability.

Reliability-Centered Maintenance is a process used to determine the maintenance requirements of any physical asset in its operating context. It recognizes that all equipment in a facility is not of equal importance to either the process or facility safety. It recognizes that equipment design and operation differs and that different equipment will have a higher probability to failure than others.

Operational Efficiency represents the life-cycle, cost-effective mix of preventive, predictive, and reliability-centered maintenance technologies, coupled with equipment

calibration, tracking, and computerized maintenance management capabilities all targeting reliability, safety, occupant comfort, and system efficiency.

7. Procedures

A. Areas will develop O&M plans for all locations in accordance with the following procedures:

- O&M plans will be based on a pre-established priority order of addressing facility components. (Critical facility systems/components such as facility mechanical, electrical, plumbing, building envelope, and required testing/certification, will receive first priority for Agency resources.)
- O&M plans will be developed for each ARS owned, leased, and occupied space for which ARS has operational and maintenance responsibilities. In space occupied by ARS in which the O&M functions are the responsibility of a University, the General Services Administration (GSA), or other non-ARS entities, the O&M plans are the responsibility of the non-ARS entity. This includes ARS and GSA full service leased space.
- O&M plans, once developed, will be reviewed/updated by Areas every 2 years.
- An O&M Guide for developing Area O&M plans is posted on SharePoint at: <https://arsnet.usda.gov/sites/AFM/FD/FEB/OM/default.aspx>.

B. Program Goals and Implementation Schedule

*Percent of Area Facility Assets	Complete Equipment Inventory by end of:	*Complete O&M Plan by end of:
25	month 6	month 12
50	month 14	month 18
75	month 21	month 26
100	month 30	month 36

*Based on Total Gross Square Feet of Area assets. O&M Plans must be based on a complete facility. The preparation of O&M plans begins upon issuance of this Policy and Procedure.

C. Cost Accounting

In order to measure if ARS assets are improving operational efficiency, locations need to capture O&M costs by asset as much as feasible. The FRPC has required all Government agencies to report O&M costs by asset since 2006. In 2006, ARS

reported 4 percent of plant replacement values for O&M costs. In 2007, ARS began capturing actual O&M costs by asset. All locations need to continue tracking their O&M costs and reporting these costs by asset into Corporate Property Automated Information System (CPAIS). Normally, actual O&M cost entries into CPAIS by asset are required no later than October 30 of each year for the previous year.

8. References and Publications

- Means Facilities Maintenance Standards by Roger W. Liska, PE, AIC, 1988
- Operations and Maintenance Best Practices: A Guide to Achieving Operational Efficiency, Release 2.0, DOE, FEMP, July 2004
- Federal Real Property Council Guidance for Real Property Inventory Reporting, June 23, 2008

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